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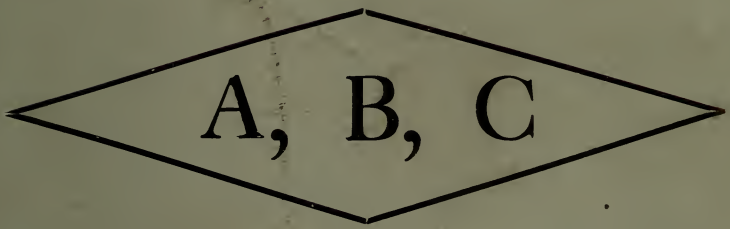
THE MURPHY



SYSTEM OF CAR AND CARRIAGE PAINTING.

THE SURFACER

MIXING CAN

THE MURPHY

A, B, C SYSTEM

OF

CAR AND CARRIAGE PAINTING.

RESPECTFULLY OFFERED TO THE CAR AND CARRIAGE BUILDERS, AND TO THE CAR AND CARRIAGE PAINTERS OF AMERICA, AND TO ALL OTHERS INTERESTED IN THE PERFECTING AND SIMPLIFYING OF MECHANICAL PROCESSES, AND IN THE DEVELOPMENT OF TIME-SAVING, LABOR-SAVING AND OTHER ECONOMIZING METHODS.

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MURPHY & CO.,

VARNISH MAKERS,

NEWARK, N. J.

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INTRODUCTORY.

WE are by no means unmindful of the fact that, in offering to the trade a new system of surfacing, we are, so to speak, putting our shoulder to a decidedly huge wheel; nor do we overlook the further facts, viz: that a *good many felloes* (fellows) have already *spoke* (n) on the subject, and that *many good felloes* (fellows) are somewhat *tired* of listening to anything "*run out*" on this theme. Yet, so positively are we impressed with the idea that only the *rim* of the subject—only the priming coat, as it were—has yet been reached by those who have preceded us in putting their shoulder to the wheel, and so full is our faith that there are still a few who believe improvement on the present system of car and carriage painting not impossible: also that these heroic few will never *tire* of seconding any well directed, earnest endeavor to discover and establish the better way, we are encouraged to give expression to our views. As a warning, however, to such as may not suspect the length we design to take them, should they set out with us on a solution of the

Carriage Painting problem, we will say that we have no intention of tireing at the rim of our wheel, nor of falling back on to the old system after getting past the priming coat, as some have done before us.

CARRIAGE PAINTERS.

Who among carriage mechanics—pending the present system of carriage painting—is more entitled to considerate judgment, yet receives less of it, than the carriage painter? Who has half as much to contend against? Who, with his work beset by an equal number and variety of hidden possibilities of disaster, acquits himself with any greater credit? A poor joint in the wood work, or a rough job in the iron work, escapes notice except from an expert; but the slightest brush mark in the painting is discovered by the most careless of eyes. The job is given to the painter to *finish*, or in other words to *perfect*. Let it be never so full of flaws, he is expected to cover and conceal them, every one. He must take care of the *looks* of the work, *make* everything right, must *leave* it right, and must have it *hold out* right. And strange to say he oftentimes accomplishes this, too, notwithstanding the fact that in selecting the materials for his work, his lead, his oil,

his Japan, his colors, and much too often too, his varnishes, he runs the guantlet of multifarious, and undetectable adulterations, any one of which may wholly spoil his work; and then—though he successfully pass all these and be possessed of faultless materials, he must yet contend with the possibly destructive influences of heat and cold, and dust, and moisture. Most truly is a successful painter entitled to boast of superior mechanical skill.

A Review of the Present System.

WHAT ARE THE DEFECTS OF THE OLD TIME AND PRESENT SYSTEMS OF CAR AND CARRIAGE SURFACING, AND WHEREIN IS THERE NEED OF, AND OPPORTUNITY FOR REFORM?

DOES ANY WELL DEFINED SYSTEM PREVAIL?

DO NOT PAINTERS DISAGREE AS MUCH AS DOCTORS, AND FULLY EQUAL THEM IN A DISPOSITION TO EXPERIMENT?

A brief review of the faults and failures of a present process is of course necessary to, and inseparable from a judicious consideration of any proposed reform. To fully comprehend *what ought to be*, we should carefully understand *what is*.

It is not our purpose to arraign the old time process as meriting quick contempt, nor would we impute entire unusefulness to certain newer methods at present more or less employed. The former has served us long and well. It was suited to its "day and generation;" and years ago when lead (ground lead) *was* lead, when oil *was* oil, and both could be relied upon; when customers were in no hurry and

Japans were never meddled with; when all new work was ordered work, and could be waited for a year; in those good, honest, "slow and easy" times, the old lead method was doubtless good enough. But times have changed. Carriages are not now ordered months ahead, but are called for *ready made*, or being selected in the wood unfinished, are wanted painted quickly, almost instantly.

The old lead method *cannot be safely hurried*, and to force its drying by use of quick Japans, incurs all sorts of trouble. Plainly, then, our era demands a change in method. The old one is out of date, and is not adapted to our time; we have utterly outgrown it and ought speedily to cast it off.

ENDEAVORS TOWARD IMPROVEMENT.

Attempts have been made at reform, and efforts to originate a carriage-painting system, with a basis other than ground lead, have been valiantly put forth and heroically persisted in; the authors of same meriting the while the kindliest considerations of the craft they sought so zealously to serve. Up to the opening of the present year, however, only partial success in this endeavor had been attained. We have no disposition to speak disparagingly of these pioneer efforts in the good work, nor would we in the slightest degree underrate the positive advantages conferred by the measure of progress which was developed by those efforts. But the fact must

remain that a compromise only was effected, and that beyond the priming coat, the newer method left the old system unmolested.

FURTHER PROGRESS.

Continued experiments and later discoveries, however, have recently resulted in the production of a Carriage Surfacing Composition far superior to anything heretofore employed.

It is a liquid material, easily applied, and may be described as a quick drying, water proof, and weather proof, elastic bodied, glutinuous cement.

Its adaptation to car and carriage surfacing is complete and perfect, for it not only *primes* the wood, but also, by an arrangement of four separately graded coatings, each coating a distinct composition suited to its own special place and purpose in the process; it successively loads, levels, and seals the exterior portion of the wood into a surface hard, solid, tough and unchanging. A pitchy primer necessitates thin coats, skillfully laid on, and to be followed up by laborious brushing in (a tattooing process, in fact,) and after all is a primer only, and requires to be filled-in upon with lead and rough-stuff precisely as in the old process. Our improvement consists of a system of surfacers, four in number, viz: a priming surfacer, a loading surfacer, a leveling surfacer, and a sealing surfacer, and these four, used sucessively, begin and complete a surface.

OBJECTIONS TO THE LEAD AND OIL SYSTEM.

The objections to be found against the old lead and oil system—if indeed it can be called a system, seeing that scarcely two painters in ten follow precisely the same rules, have already been ably, intelligently, and exhaustively discussed, as well at painters' conventions as in books and printed essays.

No practical carriage painter, however, has need to consult a book for these objections: he encounters them hour by hour.

LEAD AS A PRIMER.

Lead does not and cannot amalgamate with wood.

With every experienced and observant carriage painter of to-day, the fact that corroded lead cannot be absorbed by wood to the extent of becoming inseparably incorporated into it, or even to be permanently cemented into its grain, or upon its surface, by means of *Linseed Oil alone*, goes without saying.

We will mix together, if you please, the customary proportions of lead and oil used in making a priming coat. Have we permanently united them? Apparently not, for on our allowing the mixture to rest the one settles apart from the other. Evidently the oil was not able, strictly speaking, to dissolve the lead, (as sugar is dissolved and *kept* dissolved by water,) but its minute particles were simply distributed, and suspended in the oil by our mixing,

and which, the mixture being now allowed to rest, are settling back again.

We will stir the two together again and apply the mixture to a carriage body as a priming. Will both ingredients be equally absorbed, the lead drank up by lead-thirsty fibres?

Hardly! The *oil* will be absorbed, the *oil* will be drank up by oil-thirsty fibres; and the *oil* will feed and nourish every part, reaching even to the core. The case with the lead is somewhat different: the powdered particles of the lead are afloat in the oil of course, and must needs go with it wherever they can. The wood sucks the oil towards its centre, and thus the lead is sucked into its pores, and into the slits and hollows of its grain, but it does not go beyond. The fibrous wall within the pores, it cannot penetrate. It can only pack its particles against it, and *there drain dry*, if the wood have thirst enough to drink the oil away from it.

Our lead drained dry becomes a brittle crust, and wear and weather will soon make plain this fact.

Will some good friend reply to this, to contend that lead priming has endured for years? Admitted. So it has, and may yet be made to. Given the purest lead, the purest oil, perfectly seasoned wood, and *time*, (much time) and oily coatings, and lead will cling a good long while. But who can spare the necessary time for this result in these impatient days? Who will forswear Japans and driers, and spend two months or more in simply leading?

LEAD WORKING UNHEALTHY.

The unwholesomeness of lead is such a patent fact that we have little need here to mention it. Its disagreeable, not to say dangerous effect on health, is fully understood. Had the old surfacing system no other bad point than this, not a few would think this point alone sufficient to condemn it.

We venture to believe that the single fact, that our newer system, herein to be described, immediately emancipates the painter who adopts it from all further use of lead in surfacing, will enlist for it the earnest consideration of the craft.

SLOWNESS OF THE LEAD AND OIL PROCESS.

What carriage builder or carriage painter of experience, and wanting a durable job, would give a lead and oil priming coat less than five days to dry, or would use less than three coats of lead? Here are nine days, we will say then, to be given to leading.

In some shops it is yet the custom to give eight to ten days drying time to a lead and oil priming, and to follow this with three coats of lead, each coat allowed several days to dry. And then comes on the roughstuff—four coats—and each of these several days, and three days or perhaps a week for putty drying. How is this for "quickness and dispatch?" Twenty days for leading, and quite six weeks in working up a surface.

Supposing, now, that with a *different* surfacing material than lead and oil, with fewer coats, and much less labor, a far superior surface could be had in less than a week's time, ought not the lead and oil be laid aside?

ATTEMPTS AT HURRYING LEAD AND OIL, AND THE TROUBLES SUCH ATTEMPTS ENTAIL.

All sorts of experiments for hastening the lead and oil process, and for shortening the time required for oil to dry, have been attempted, but never yet without imperiling the durability of the work. As you *shorten* the drying, you *limit* the wear, at the same time endangering safety and success. Indeed *swiftness* is *not compatible* with *safety* in a lead and oil process, and the nearer you approach the one, the farther do you get from the other. So thoroughly is this fact grounded in the experience of painters everywhere, and so universally is its truth established, that to speak to a painter of a quickly-finished job, is to invite him to regard it as "scabby" and short-lived.

And just here, permit us to remark, there exists, what is at once our most formidable obstacle, and also our chiefest assistance to the introduction of a substitute for lead and oil in carriage painting. The carriage painter, educated and trained to suppose that *lead only* can be used, is practically unable to believe that anything else is suitable.

It is an axiom in science that no two atoms or forces can occupy the same place at the same instant. One absolutely must *vacate* before the other can *occupy*. Equally true, too, is this fact, in mental as well as in physical science. Hence, so long as a painter's mind is *filled full* with the notion that lead and oil *alone* are fit for carriage work, a favorable opinion of any other surfacing material *cannot* enter his mind. Such a painter will declare that "if lead and oil cannot produce a safe surface quickly and safely, nothing else can."

This is our "wall of Jericho."

But observe. This same painter's every day's experience *with* lead and oil, if he be observant and thoughtful, only serves to emphasize to him the fact that they cannot produce a *safe* and *lasting* surface *quickly*, and sets him to wishing that there *might* be something better suited to the purpose.

And here is the trumpet that in time will cause our "wall of Jericho" to tumble.

Our carriage painters have need to be reminded that they should not judge of everything from a lead and oil stand point. Because lead and oil, when quickly hardened, will cleave off, crack, and chip in pieces, must it inexorably follow that all other quick-hardening surface material will? Suppose we can introduce something of an India-rubber like character for a surfacing material, something possessing toughness, and a tenacious element which will be lasting. Must this material be estimated on

by the results attending the use of a dry metallic powder, having no tenacity whatever of its own, and possessing no inherent affinity for either the oil it is combined with or for the wood to which the oil unites it? A glutinous oil has a quick affinity for a dry lead powder, but we can conceive of no particular affinity in a dry lead powder for anything, unless it be for a painter's digestive apparatus into which it can carry colic.

Certain is it that lead has no such affinity for wood as pitch, for instance, possesses, and it will only cleave to wood *so long as it retains the gluten* of oil. *Our* surfacing material, on the other hand, possesses *inherently* a pitch-like affinity for wood, and speedily becomes incorporated into it. A carriage painted according to our system will never need to be re-primed; mark that!

JAPANS AND QUICK DRIERS.

The basis of any and every attempt to accelerate the drying of a coat of lead and oil must of necessity be that of an artificial hardener, universally dubbed Japan.

Japan! What is it? Who, on seeing a sample, can tell of what it is composed? Doubtless many can tell us of what it ought to be composed, but who will venture to *insure* its being what they think it ought to be? Japan (as very commonly used) is anything! It is everything, (except what

we want it to be!) It is a mystery! It is an uncertainty! Over the (impatient) efforts of most carriage painters, it is a mastery! There are, of course, superior Japans, and there are driers which, when understood and used with nice discrimination, are measurably safe, and suitable to use, and yet a "drop too much" of even these best brands may ruin a fine job. But the average Japan, who shall rely on it? Its vagaries are legion! Uniformity in it is hopelessly unattainable, unless it be a uniform certainty to cause cracking and chipping.

The philosophy of hardening an oily paste by the introduction thereto of crispy, flinty particles, is fundamentally unsound, and yet this hazardous path of "Japan" is the only race track available for "speeding" the lead and oil process.

By our new system, the use of Japan is wholly dispensed with. The drying properties of the new surfacing material are organic, and "to the manner born." No artificial drier is called for. Hence all the ills and evils that Japan is heir to are at once avoided. The material hardens naturally, and with all sufficient rapidity, on exposure, in a thin coating, to the air.

LABORIOUSNESS OF THE LEAD AND OIL METHOD.

The great amount of labor necessary in the lead and oil method as compared to the small amount of work required in the newer method herein advocated, will be noticeable to all.

In the mechanic arts, it is the labor that costs, and this fact is conspicuously true in carriage painting. The cost of labor, as compared to the cost of paint stock, is in no case less than three to one, and in many cases this disproportion is doubled. For this reason, if by a new system of painting we are able to reduce the amount of labor one-third, such a system will be the cheaper one, even should the material of the new system cost double that of the old, which, however, it does not.

EXAMPLE.

Suppose, for instance, that the cost of a job, old system, was $2.50 for stock, and $10 for labor, making a total of $12.50.

Now if by the new system the cost of the labor was reduced one-third, viz: to $6.67, the cost of the stock could be increased to double what it was, viz: from $2.50 to $5.00, and yet the new process would be cheapest, as this total would be only $11.67.

Example:

OLD SYSTEM.

Labor	$10 00	
Stock	2 50	
		$12 50

NEW SYSTEM.

Labor, (reduced one-third)	$6 67	
Stock, (increased double)	5 00	
		11 67
Difference in favor of the new system		83

If now a comparison of the amount of *time* required by each of the different systems was considered, the advantage of the newer method would be still more apparent.

It is by no means intended that the cost of the new material shall be double that of the stock used in the old system, hence the above example is given simply as a means of contrasting the two.

SEVEN TO TEN COATINGS.

Seldom less than seven coats—three coats of lead, and four of roughstuff—are employed in getting a surface by the old process, and not unfrequently ten coatings are put on. The English carriage painters make use of about ten coats, and in France the number is not less.

Now there is no getting away from the fact, that to thoroughly paint over a carriage body so many *separate times*, involves a considerable amount of work. It is hand-work, too, and is therefore expensive work. But there would be no special objection to either the work or its cost, however, if the labor fully accomplished its aim, the which on very good authority, it does not. The grain of the wood, though plastered over with ten separate coatings, is often distinctly discernible within a few months after the vehicle is put to wear.

Verily this looks not altogether unlike defeat for the ten-coat process.

Now if lead and oil really operated to *bind together* and *seal up* the grain of the wood as it has been considered capable of doing, why should we be able to see the grain through ten or more coats, including color and varnishes?

Are we not here brought directly face to face again with the fact that lead and oil are *inefficient* surfacers?

Please bear in mind that with our improved surfacing material, the modus operandi of which involves *six coatings only*, on finest jobs, and all six of which may be safely applied and completed in eight consecutive days, we can produce a surface, which for tenacity, toughness, ivory-like finish, and durability, is unequaled. It is a surface which will never have to be renewed, and through which the grain of the wood will never indicate itself.

THE MANY DETAILS OF THE LEAD AND OIL PROCESS.

The routine of duties, and riddlesome receipts attaching to the lead and oil process, are in striking contrast with the simplicity of our newer method. The many mixings and many proportionings necessary to start and complete a new job through the priming, leveling, and coloring coats are puzzling, to say the least.

Almost as many methods of proportioning, too, as there are paint shops; is it any wonder that there is a diversity and uncertainty in results? Is it at all sur-

prising that essays are written on "The Deviltries of Paint and Varnish"? So formidable indeed is this feature of formulas that to a great extent guessing at proportions has substituted itself in the place of accurate measurement, and a "*little*" of this, and a "*little*" of that, to "*some*" of the other, is the practice in compounding coatings which call for scrupulous fidelity to rule.

Doubtless the inequalities of paint stock, of lead, of oil, of Japan, have led to this inattention to fixed formulas, and perhaps it is not strange that a painter after repeatedly trying carefully proportioned mixtures with no better result than to behold his most painstaking measurements set at naught by adulterated lead, impure oil, or a brittle Japan, should decide that fixed rules were of no particular advantage. But what is this but another argument against the continuance of a system which involves so many chances of ill luck? The fact is, our carriage painters should no longer find it necessary to make so many mixings. Why ought a painter to personally produce his working materials any more than a carriage trimmer should personally work up from the raw material, his cloth and patent leather? It seems to us that the painting art is considerably behind other trades in freeing itself from its drudgeries. It has pretty much relinquished its paint and color grinding by hand, its oil boiling, Japan making, and varnish making, but still holds on to its mixing, mixing, mixing.

If the painter can *trust* to buy ready-ground lead, and *chance* his oil, and *stake results* on average Japan, would he run any greater risk by making use of ready-mixed surfacers, needing no personal manipulation by himself whatever? Would he not rather reduce his risk as well as reduce his care and labor? Our new system of surfacing comprehends an important reform, in that it designs to supply to the craft a series of surfacing mixtures, each mixture perfect in itself, and ready for use without any additions to it whatever by the painters.

A SURFACE

What is a true surface, an enduring surface, as understood by the carriage painter?

Is it the exterior portion of wood and iron filled *into*, sealed up, hardened, leveled and brought to a glass-like smoothness? or is it a *crust* or *shell* created *upon* such exterior portion of wood or iron?

Ice is said to form upon the surface of water, but the ice is never called the water, nor is it properly the surface of the water. It is simply a crust upon the water. It is a strong crust at times, and is smooth, compact and solid, and seemingly secure enough to last for ever; but it is, after all, only a crust, and its days are numbered. Something like this, it seems to us, is a so-called "surface" of lead and oil, and roughtsuff, on a carriage body.

The surface is not the wood, but a shell-like crust

upon the wood, and it only adheres *to* the wood, so long as its composition is able to retain a sufficient quantity of oil (unwithdrawn from it by absorption into the wood) to give it the requisite adhesiveness and semi-elasticity to withstand the separating influences of wear and weather. If ever, therefore, and whenever, this balance of *retention* by the lead, is overcome by *absorption* by the wood, does not this surface become a very brittle one and liable to cleave off, crack and chip?

That there is a disintegrating influence at work on the *inside* of a coat of lead and oil, as well as destroying influences outside of it, must not be lost sight of. The interior dry and thirsty fibres of a well-seasoned piece of wood will most certainly exert their utmost power of absorption to rob the lead of its oil; and atom by atom they will get it too, and will finally win the fight. Like "Barkis," too, the oil "is willin'," for it loves the wood better than it loves the lead, and is only too glad of a chance to go.

GRAIN SHOWING.

Now to our mind, this unsatisfied, unattended to, unprovided against *thirstiness* of these interior fibres, offers a ready solution of that otherwise mysterious problem, grain showing; (grain showing, by the way, is a thing unknown and impossible in the New System). What painter has not many times been greatly surprised to find that a carriage body, on

which he expended extra care, and the surface on which, when the vehicle went out from his shop, was as smooth and solid as glass, has, in two or three months, come to exhibit a very bad case of grain showing? And what is the explanation of it? Why simply that the absorbing force of the interior fibres has wrought the change. It has gradually removed the oil which at first filled up the exterior cells of the wood, drawing it inward, and at the same time has given an opportunity for the lead coat which is yet in a degree elastic, to yield to the inward movement and pack itself into the grain in such a way as to produce a delineation of the superficies of the grain, on its own outer self. Is any better evidence than this wanted, as a proof that wood is bound sooner or later to be master in the lead and oil process of surfacing? Had now the material used for obtaining a surface been of a character to seal up the grain cells, and to solidify within them, to the extent of being *unresponsive* to the attractions of the interior fibres; (and instead of allowing itself to be "taken in" like the fickle oil, which by deserting its first love, the lead, for a harem of fibres, very soon became of no account,) had been of a disposition to give a "cold shoulder" to all their "winning ways," would the grain ever have been seen? If you are a smoker, please puff that over a while.

MURPHY & CO
SURFACERS
SURFACER A
SURFACER B
SURFACER C
SURFACER D
COLORONE

A BETTER WAY.

THE LEAD AND OIL PROCESSES IMPROVED ON.
UNIFORMITY SUBSTITUTED FOR INGENUITY.
A SYSTEM THAT SYSTEMATIZES.

THE

A, B, C SYSTEM

OF

CAR AND CARRIAGE SURFACERS.

NON-FLAKING, NON-CRACKING.

SIMPLE,
SAFE, ... CERTAIN,
SWIFT.

NO LEAD! NO OIL! NO JAPAN! NO COMPOUNDING!

DESCRIPTION.

The theory and principles underlying and forming the ground work of the A, B, C System of Car and Carriage Surfacers, are:

FIRST.—(*Non-Cracking.*)—Penetrativeness, Tenacity, Elasticity.

SECOND.—(*Non-Flaking.*)—Coherency, Toughness, Solidity.

THIRD.—(*Money-Saving.*)—Simplicity, Quickness, Economy.

COMPOSITION OF THE SURFACERS.

The composition of the A, B, C Surfacers, being a result of extended experiment, and protracted study, is necessarily a private and proprietary matter, but its characteristics will be made sufficiently apparent to enable every intelligent craftsman to form an estimate of its adaptation to the work.

ARRANGEMENT.

It is a system made up of four separate surfacing mixtures, each surfacer (mixture) complete and per-

fect in itself, and ready for the brush as it comes from the can.

Its arrangement is as follows, viz :

First. Surfacer A—Priming coat.
Second. Surfacer B—Loading coat.
Third. Surfacer C—Leveling coat.
Fourth. Surfacer D—Sealing coat.

These four Surfacers—the first designed to prime the wood and to permeate its fibres; the second designed to load the pores of the grain; the third designed to level the surface; and the fourth to seal it over, constitute a course of kindred coatings which combine to produce a surface that for smoothness, solidity, and wearing quality is unsurpassed.

SURFACER A.

This Surfacer is applied directly to the wood into which it penetrates and which it permanently preserves. Its permeating power is remarkable, and being of a glutinous nature, and semi-cement-like it, after filling the fibres, solidly concretes, thereby nourishing, toughening, and welding them together, and making them as water-proof as India rubber.

The striking peculiarity of this first Surfacer as contrasted to a priming of lead and oil, is that it becomes a *fixture.* When once dry it is unsusceptible of further absorption by the wood.

It is unremovable from the fibres and cells into which it has intrenched itself, and there are no forces either within the wood or outside of it able to separate its constituent parts, or cause it to cleave off, crack, flake, or peel. A piece of wood coated with Surfacer A, and given twenty-four hours to dry, may be soaked in cold water for weeks, or boiled in hot water for hours, without perceptible effect.

Time: Surfacer A requires forty-eight hours only to dry, and one coat only should be used. Add nothing to it; it needs neither oil, Japan, or spirits of turpentine, and herein is a guarantee of uniformity. In the lead and oil system uniformity is well nigh impossible. A *little* oil, a *little* Japan, or a little spirits of turpentine, is the customary directions of foreman to workman, and be the quantity what it may, a spoonfull, or a cupfull, it is "a little" every time; guessing takes the place of measuring, and uniformity is lost. Our system is uniformity itself, and uniform results may therefore be safely counted on.

Method of applying: No specially superior skill is called for in the laying on of either Surfacer. Apply them with ordinary brushes, separate brushes for each Surfacer, of course, and lay it precisely as you would lay varnish.

SURFACER B.

The composition of Surfacer B, is to all intents and purposes identical with that of Surfacer A, over

which it is to be laid; except that, *it possesses additions adapting it to its place* in the system, and which make its nature somewhat more cement-like.

Its office is to more thoroughly load the pores and cells of the grain, and its being akin to Surfacer A, enables it to unite itself solidly and inseparably to it.

Surfacer B dries in thirty-six hours.

SURFACER C.

Surfacer C follows puttying-up. It is closely related in its composition to Surfacer B, over which it is to be laid. Its office is that of leveler. Having primed with A, loaded with B, and "puttied-up," we now level with Surfacer C.

Three coats are suggested for best Coach Body work, and they can be repeated every twelve hours. For ordinary jobs, and where a specially fine surface is not demanded, a single coat of Surfacer C will be found quite sufficient.

Surfacer C will dry in twelve hours, and when dry may be scoured down with block pumice.

SCOURING.

The scouring process in this system is necessarily very much the same as in the old system, yet owing to fewer coats, it should be attended with much less labor. Care is always called for in scouring, and its absence is by no means recommended here.

Indeed, we would favor the most conscientious painstaking from this point forward, and we would never entrust the scouring or rubbing-down of a fine job to an incompetent or careless workman.

The A, B, C System of surfacing proposes to leave little or no accumulation of material *upon* the wood, but to obtain its surface practically *in* the wood, and *of* the wood, and hence the scouring down becomes an important feature in its processes. It need be no more difficult than any other scouring, but should be pursued with close attention, and with painstaking care.

Surfacer C is, of course, likely to be wholly removed by the pumice block; but unless the job be a particularly rough one, Surfacer B will hardly be taken down so close as to leave Surfacer A uncovered. No danger need be apprehended, however, even though Surfacer A be touched, as the grain will not rise unless the scouring is carried entirely through Surfacer A, and into the wood itself—a blunder not likely to be made. After block-pumicing the job, smooth it off with fine sand-paper. In block-pumicing, a heavy pressure is not to be approved of. A slight pressure is, of course, indispensible; but in no stage of the surfacing process, does the importance of the old maxim "make haste slowly," appeal more strongly for recognition than while the pumice-block holds sway.

SURFACER D.

After having scoured and sand-papered Surfacer C, apply a single coat of Surfacer D, the office of which is to seal the work.

Analagously to our having described the preceding Surfacers A, B, and C, as respectively priming, loading, and leveling coats, we are disposed to entitle Surfacer D the discharge coat, and for the reason that on the application of and mossing off of this Surfacer when dry, the work of surfacing proper will have been completed and *discharged*, the job being now ready for the color.

Surfacer D should be given thirty-six hours in which to dry, after which it should be lightly gone over with fine sand-paper.

THE SURFACING COMPLETED.

The work of surfacing, properly speaking, starts with a job in the wood, and brings it to a condition of readiness for coloring. This point reached, the work of surfacing is practically at an end. Hence did the A, B, C System of Car and Carriage surfacing have in view the separate and special work of surfacing, and of surfacing only, we have now reached a point at which we might properly make our bow, and step down and out. But the A, B, C System comprehends more than simply preparing a surface. It proposes to *take care* of its surface after having produced it.

COLOR AND COLORING.

It is not within the province of the A, B, C System of Surfacers to supply the painter with Colors, nor, indeed, is there any need for it to do so. His wants in this direction are already abundantly met, and we think we may safely say, are as fully and sufficiently provided for as we can conceive it possible for them to be.

That the several prominent color manufacturers of America are keenly alive to the wants of the carriage painter, as well as conscientiously painstaking in their endeavors to satisfy the same, is abundantly proven by the high degree of perfection possessed by their products. We are, however, by no means ignorant of the fact that notwithstanding the high character of the colors above alluded to, our carriage painters still find the use of colors attended by many perplexing, and not unfrequently, by most unsatisfactory results; but to our mind, these accidents may less rightfully be charged up against the colors, than to what the painter *puts into the colors* while making them ready for use. Inferior Japans, not always to be detected by price or appearance, impure oil and "benzinated" turpentine, are not

wholly "without sin" in this connection. Could the painter unerringly "steer clear" of these, his color troubles would be fewer and further between.

With a view to assisting him in doing this, the A, B, C System supplies to the painter a new and most invaluable compound to be known as "COLORONE," or Color Insurer, a substitute for Oil, Japan and Varnish in Color mixing, and by the use of which, "peeling off," "cracking" and "chipping" are rendered impossible. (See page 34.)

We will offer a single suggestion in relation to the coloring of a finely-surfaced job, and which suggestion we trust will not be thought wholly uncalled for, viz: That a superior surface may be very easily spoiled by a too heavy coat of color. A coat of color, from which the brush marks will not wholly flow out, will put to nought much if not all the painstaking care expended in getting the surface. No amount of rubbing varnish, nor any degree of persistency in rubbing down the rubbing varnish, will make amends for mistakes made in coloring. Thin coats, therefore, and more of them, and each coat carefully "layed off," is the policy we would commend.

THE A, B, C SYSTEM

COLORONE,

OR

COLOR INSURER,

A Substitute for Oil, Japan and Varnish in mixing colors.

Colorone insures easy flowing.
Colorone insures firm fastening.
Colorone insures non-chipping.

DIRECTIONS.

DRY COLORS.	Add Colorone in quantity sufficient to make a thick paste, then thin for use with spirits turpentine.
COLORS ALREADY GROUND.	To color thinned with turpentine ready for use, add Colorone in the proportion of a *gill* of Colorone to a *pint* of thin color.

We can guarantee success for every color (pure color) into which Colorone is put. We cannot gnarantee any A, B, C System job from which Colorone is left out. Painters will find Colorone a truly wonderful compound for color mixing, and having once used it, will use it ever after.

A, B, C SYSTEM PRICE LIST.

SURFACERS.

Surfacer A—Primer	per gall.,	$4 50
Surfacer B—Loader	"	4 50
Surfacer C—Leveler	"	4 00
Surfacer D—Sealer	"	4 50

COLOR INSURER.

Colorone—for fastening colors	per gall.,	$4 50

COLOR AND VARNISH.

Murphy's Black Rubbing Varnish	per gall.,	$4 00

RUBBING VARNISHES.

Murphy's Rubbing Body Varnish	per gall.,	$4 00
Murphy's Quick Rubbing Varnish	"	4 00

FINISHING VARNISHES.

Murphy's Palest Durable Body Varnish	per gall.,	$6 00
Murphy's Pale Durable Carriage Varnish	"	5 00
Murphy's Hard-Drying Carriage Varnish	"	4 50

A, B, C SYSTEM MIXING CANS.

(Patent applied for.)

Holding 5, 2½, and ½ gallons each, furnished at cost of manufacture.

COMPARATIVE TIME SCHEDULE.

OLD SYSTEM.

SURFACING ONLY.

BODY—average job.

Priming and leading, 3 coats,	9 days
Putty,	2 "
Roughstuff, 4 coats,	10 "
Total,	21 days

GEAR—average job.

Priming and leading, 3 coats,	8 days
Putty,	2 "
	10 days

COMPARATIVE TIME SCHEDULE.

NEW SYSTEM.

SURFACING ONLY.

BODY—best job.

Surfacer A, one coat,	2 days.
Surfacer B, one coat,	1½ "
Putty,	1½ "
Surfacer C, three coats, 12 hours each,	1½ "
Surfacer D, one coat,	1½ "
Total,	8 days.

GEAR—best job.

Surfacer A, one coat,	2 days.
Putty,	1½ "
Surfacer B, one coat,	1½ "
Surfacer D, one coat,	1½ "
Total,	6½ days.

IMPROVED COLOR AND VARNISH.

MURPHY'S A, B, C SYSTEM

BLACK RUBBING VARNISH

A Specialty in the A, B, C System of Car and Carriage Surfacers.

The Murphy Black Rubbing is admitted to be the best color and varnish available to the trade. As its name implies, it is a regularly constituted *rubbing varnish*, and not a color and varnish only. It supplies every requirement of the ordinary color and varnish, and more. Color and varnish, as mixed up by the carriage painter, for the use of a glossy color simply, is by no means identical with our Black Rubbing Varnish.

The difference between these two may, perhaps, be as clearly shown by referring to the former as *color* with varnish in it, and to the latter as *varnish* with color in it. And yet our varnish with color in it, ground into it, is a better "color with varnish in it," than can be mixed up by hand. Its covering quality, free working character, and reliable rubbing properties, cannot be surpassed, if indeed they can be equaled.

IMPROVED SURFACING VARNISHES.

MURPHY'S A, B, C SYSTEM

RUBBING BODY VARNISH.

A Specialty in the A, B, C System of Car and Carriage Surfacers.

The degree of importance attaching to Rubbing Varnish in the business of successfully surfacing a carriage, ranks second only to that of the primer. The Rubbing Varnish is not only responsible for itself, but to a great degree is it responsible for the "holding out" of the finishing varnish which covers it.

Of all the varnishes used by the coach painter an entirely satisfactory rubbing varnish is by far the most difficult to supply. It should be of good body and yet must work freely; it must harden quite glass-like, and yet must not "chip;" it must hold quite elastic, and yet must not "sweat;" it must *sustain*, not *absorb* the finishing coat.

That the Murphy Rubbing Varnishes are admitted to stand foremost, among all rubbing varnishes, either domestic or foreign, and for the possession of all the qualities going to make up a perfect rubbing varnish, is a fact which we believe is now conceded.

IMPROVED RUBBING VARNISH.

MURPHY'S A, B, C SYSTEM

QUICK RUBBING VARNISH

A Specialty in the A, B, C System of Car and Carriage Surfacers.

In these days of haste and hurry, a Quick Rubbing Varnish is an absolute necessity. It is a thing that must be had and cannot be done without. Repair work and re-painted jobs demand it. Slower drying surfacing varnish cannot in all cases be waited for. To meet this urgent requirement, we have brought to bear our best experience in the art of varnish making. We can recommend our present Quick Rubbing as being as nearly perfect as it is possible for a quick, hardening varnish to be. It will dry hard in from twenty-four to thirty-six hours, and will rub without sweating. We have given especial attention, too, to the matter of its elasticity, whereby cracking and chipping are guarded against. It should be used over our Black Rubbing Varnish.

Perfected One-Coat Varnish for Carriage Parts.

MURPHY'S A, B, C SYSTEM

HARD-DRYING CARRIAGE VARNISH

A Specialty in the A, B, C System of Car and Carriage Surfacers

Our Hard-Drying Carriage Varnish has so long and so prominently enjoyed the confidence of a widely extended patronage, that we shall hardly need to describe it here. It is our highest priced, and is therefore our highest quality one-coat carriage part finishing varnish. And whether used over dead color, or color and varnish, we may safely guarantee its giving entire satisfaction.

The demand for a thoroughly reliable and uniform one-coat varnish was never greater than at present. Our Hard-Drying Carriage in body, drying, and all the requirements which a varnish of this nature should possess, will be found superior to any other varnish of its class.

PERFECTED FINISHING CARRIAGE PART VARNISH.

MURPHY'S A, B, C SYSTEM

PALE DURABLE CARRIAGE VARNISH.

A Specialty in the A, B, C System of Car and Carriage Surfacers

The similarity in the names of our two leading varnishes—our Pale Durable Carriage and our Palest Durable Body—implies, as it is intended to do, a very close similarity in their general characteristics. In all the qualities which go to make up a perfect finishing varnish, they are alike, each, however, being especially adapted to the uses for which it is intended, the one for carriage parts of best work, and the others for bodies. Our Pale Durable Carriage Varnish hardens more thoroughly than our body, but in its working properties and its brilliancy is fully the equal of that superior varnish. For the place and purpose for which this varnish is designed, it is all that any painter can desire.

PERFECTED FINISHING VARNISH.

MURPHY'S A, B, C SYSTEM

PALEST DURABLE BODY VARNISH.

A Specialty in the A, B, C System of Car and Carriage Surfacers.

The qualities and properties necessary to be looked for in an altogether perfect finishing varnish adapted to the finest coach body work, are known to every carriage painter; but the difficulties to be encountered in the production of a body finishing varnish, one embodying every quality and every property that can be demanded by the many painters, in many places, and under many temperatures, or conditions or situations, is known to the varnish makers only. The carriage painter knows one side, but the varnish maker knows both sides. He is supplied *gratis* with the opinions of every individual to whom his goods are sent, who is able to discover the slightest defect (real or imaginary) in his varnish, and not unfrequently the complaint is emphasized by the return of the goods; and so, in addition to the aid afforded him (and assuredly it is

an aid and a help) by the pointing out a fault or supposed fault in his goods, he is able to test the judgment of the complainant and the quality of the varnish objected to, at one and the same time. He can, by practical *tests* of the varnish complained of, and sent back to him (these tests to be made by his varnish tester, an expert at carriage painting), attempt to discover for himself the fault complained of, and if he find it to really exist, he can take steps to correct the same as to future goods.

It will not, however, be supposed that an education of this nature, and acquired by such means, is either an easy one or a speedy one to obtain. From the multitudinous experiences, which in a long drawn-out procession have appeared and reappeared to us during many successive years, we have derived a knowledge of the wants and necessities of the trade sufficient to render us fully aware of what is needed in a finishing body varnish.

As a result of this experience, we offer our Palest Durable Body Varnish, not as an imitation of any other varnish, domestic or foreign, but as superior to any other yet known to the trade. In its color, its working properties, its fullness, its drying and hardening, and most important of all, in its durability, it will be found to give complete and entire satisfaction, and we feel confident that when its qualities are fully known, it will be a more popular varnish than any heretofore manufactured.

MURPHY'S

IMPROVED

A, B, C SYSTEM VARNISHES

COLOR AND VARNISH.

A, B, C System Black Rubbing Varnish.

Price, Four Dollars per Gallon.

RUBBING VARNISHES.

A, B, C System Rubbing Body Varnish.

Price, Four Dollars per Gallon.

A, B, C System Quick Rubbing Varnish.

Price, Four Dollars per Gallon.

FINISHING VARNISHES.

A, B, C System Hard-Drying Carriage Varnish.

Price, Four Dollars and a half per Gallon.

A, B, C System Pale Durable Carriage Varnish.

Price, Five Dollars per Gallon.

A, B, C System Palest Durable Body Varnish.

Price, Six Dollars per Gallon.

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